

Claims

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1. A device (1) for controlling an internal combustion engine (500),
characterized in that

10 a calculation means (410), before a start of the engine, recognizes a possible
self-ignition operating state as a function of operating parameters and ascertains
suitable control parameters for preventing this possible self-ignition operating
state.

15 2. A method for controlling an internal combustion engine, characterized in
that before a start of the engine, as a function of operating parameters, a possible
self-ignition operating state is recognized, and control parameters suitable for
preventing this possible self-ignition operating state are ascertained.

20 3. The device or method as defined by claim 1 or claim 2, characterized in that
as a function of the control parameters, at least a starter and/or an injection device
is varied.

25 4. The device or method as defined by at least one of the foregoing claims,
characterized in that for ascertaining the control parameters, at least the position
of a cylinder that on starting is the first to enter compression or begin an intake
stroke and a variable that represents a combustion chamber temperature are
taken into account as operating parameters.

30 5. The device and method as defined by claim 4, characterized in that for
ascertaining the control parameters, an intake air temperature is taken into
account.

6. The device and method as defined by at least one of the foregoing claims,
characterized in that in a direct-injection internal combustion engine, the fuel

injection is varied such that the fuel injection does not occur until once the cylinder entering into compression has passed its top dead center.

5 7. The device or method as defined by at least one of the foregoing claims, characterized in that the rpm of the starter is varied such that the combustion chamber temperature remains below a critical temperature threshold.

10 8. The device or method as defined by at least one of the foregoing claims, characterized in that the rpm of the starter is varied such that the combustion chamber pressure remains below a critical pressure threshold.

15 9. The device or method as defined by at least one of the foregoing claims, characterized in that an injection quantity is increased such that the combustion chamber temperature remains below, or drops below, a critical temperature threshold.